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Research Article

Description of the male of *Ropalidia chromis* Polašek, 2024 with further biological notes on the African species of the genus (Hymenoptera, Vespidae, Polistinae)

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Abstract

The male of *Ropalidia chromis* Polasek, 2024 is described herein, elucidating its distinctive phylogenetic and morphological characteristics. Supplementary distribution records and nesting data are provided for several African *Ropalidia* species, contributing to the understanding of their biogeography and ecology. Additionally, *Ropalidia mutuntula* **nom. nov.** is introduced as a replacement name for *Ropalidia flavoscutellata* Polasek, 2025, to resolve taxonomic ambiguities.

Key words: Africa, description, Hymenoptera, phylogeny, *Ropalidia*

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Introduction

Recent taxonomic and phylogenetic investigations into African *Ropalidia* Guérin-Méneville species (Hymenoptera, Vespidae, Polistinae) have significantly expanded the known diversity within the genus. Historically, the number of recognized African *Ropalidia* species was 56 (Kojima and Carpenter 1997; Carpenter and Madl 2009; Blommers 2012). However, recent integrative taxonomic and molecular analyses have elevated this count to 116 species (Polasek et al. 2022; Polasek and de Beer 2023; Polasek 2024; Polasek et al. 2025; Polasek et al. in press;), exhibiting a much more diverse genus, characterized by substantial inter-species morphological overlap, cryptic genetic lineages, and multiple localized speciation events. Despite these efforts, a robust subgeneric classification and reliable species delineation within *Ropalidia* remains challenging, which complicates the taxonomic assessment in a genus approaching 300 species across entire distribution, most of which occur in Asia.

African *Ropalidia* can be broadly partitioned into two principal species groups: the *capensis* and non-*capensis* groups. Malagasy species appear to have originated from the *capensis* group, indicating a likely biogeographical pattern (Polasek et al. in press). Notably, several distinct lineages are represented within African mainland *Ropalidia*, including species such as *Ropalidia*

mabawa Polašek, 2025 and *Ropalidia chromis* Polašek, 2024. These taxa are known solely from single female (holotype) specimens, which exhibit unique morphological traits not observed in other congeners.

Ropalidia mabawa, described from Tanzania, displays distinctive features such as a darkened wing apex, very shallow punctures on the exoskeleton, and a rounded propodeum – morphologically and chromatically resembling certain *Belonogaster* de Saussure species within the subfamily Polistinae. Conversely, the single specimen of *R. chromis* presents ambiguous affinities, exhibiting morphological traits characteristic of both the *capensis* and non-*capensis* groups. Furthermore, *R. chromis* has unique morphological characteristics of clypeus, pronotum and tergum I that are uncommon among African *Ropalidia* but are prevalent in other Polistinae genera, notably *Polistes* Latreille.

The taxonomic significance of male Polistinae specimens is well documented, as female morphology often exhibits minimal distinguishing features, with coloration sometimes serving as the sole diagnostic trait (Kojima 1999; Polasek et al. 2025). Consequently, comparative analyses of male and female specimens are crucial for resolving phylogenetic relationships, despite occasional discrepancies between morphological and genetic data (Schmid-Egger et al. 2017). In social Hymenoptera, detailed knowledge of both sexes, alongside nesting architecture, is essential for robust taxonomic and phylogenetic inference (Wenzel 1998).

This study aims to enhance the understanding of *Ropalidia chromis*, focusing on its taxonomic status and nesting biology. In addition, a number of updates on the African mainland species is provided, contributing to the broader comprehension of African *Ropalidia* diversity and evolutionary relationships.

Material and methods

This study was based on specimens from two collections, namely Musée Royal de l'Afrique Centrale, Tervuren, Belgium (RMCA) and California Academy of Sciences (CAS). In addition to these, all recent observations on iNaturalist, that were not included in Polašek et al. (2025) or that were published afterwards were re-visited and checked. Nests were assigned to species only in cases where there were no taxonomic ambiguities. In several instances, it was impossible to ascertain the exact species, so such observations were retained at the genus level. In some instances, additional information from the original observer was sought, although in most cases this was limited to the material that was initially posted online.

Photos were taken with a Leica s9i stereomicroscope with a built-in 10-megapixel camera. Stacking was based on Helicon Focus 6.8.0 software (Helicon Soft, Kharkiv, Ukraine; https://www.heliconsoft.com). Several abbreviations are used; metasomal terga are abbreviated as T (T1–T6/7), while sterna are abbreviated as S (S1–S6/7). Antennal flagellomeres are enumerated and marked as scape+pedicel+AF (AF1–AF10/11). For examined specimens, label data are provided between quotation marks ("-"), with forward slash used to separate lines of the same label.

Results

Ropalidia acuminata Polašek, 2025

Observations. Angola • 3♀♀, nest; Bie, Kuemba; 12.15194°S, 18.15319°E; 27 Oct. 2024; obs. Robert Taylor; (Taylor 2024).

New record for Angola. This species was initially reported from Zambia, Democratic Republic of the Congo and SW Tanzania, with a new record from Angola. Two nests were observed, which is an example of the same-species nest clustering that is common in some Malagasy species (Polasek et al. in press). The larger nest showed a disrupted nesting pattern, in which the first few cells were built but only the distal ones were used to rear larvae, and these first few were never completed (or were maybe later on reused for nesting material). Both observed nests were located on the same green twig, in an apparently moderately dense woodland region (Taylor 2024).

Ropalidia amabala Polašek, Bellingan & van Noort, 2022

Observations. Republic of South Africa – Eastern Cape • 1 ♀; Gqeberha, Lovemore Park; 34.00695°S, 25.53650°E; 5 Aug. 2023; obs Ken Pinchuck; (Pinchuck 2023) • 1 ♀; Sarah Baartman District Municipality; 33.55328°S, 26.85941°E; 12 Apr. 2024; obs Corné Rautenbach; (Rautenbach 2024) • 1 ♀; Cacadu, Ndlambe Local Municipality; 33.64270°S, 26.65607°E; 23 Oct. 2024; obs Galpinmd; (Galpinmd 2024).

This species was initially reported from south-eastern parts of the Republic of South Africa, with three additional localities documented in the current study. The nests of this species are built directly on tree trunks, where coloration and texture closely match the surrounding plant material, providing excellent visual concealment (Polasek et al. 2022).

Ropalidia africana (Cameron, 1910)

Material examined. Democratic Republic of the Congo • 1♀; Tshopo, Yangambi, "MUS. ROY. AFR. CENTR./ Yangambi (Stan.)"; Dec. 1958; leg. P. Dessert; RMCA.

Observations. Republic of South Africa • multiple ♀♀, ♂♂ and nests; Western Cape, Eden; ~33.96778°S, 22.08982°E; Dec 2015–Nov 2021; obs Sally Adam; (Adam 2015, 2016, 2019, 2020, 2021) • 2♀♀, nest; Blyde River Near Hoedspruit: Blyde riverine forest; 24.405°S, 30.814°E; obs Wynand Uys; (Uys 2013) • 9♀♀, nest; Western Cape, George, Fernridge; 33.94130°S, 22.46691°E; obs Christiaan Viljoen; (Viljoen 2024)

New record for South Africa.

Notes. This species is characterized by an impunctate inner orbit, developed inferior propodeal carina and elongated posterior part of T1. A previously reported wide distribution from Gabon to Mozambique (Polasek et al. 2025) is

expanded by a number of observations from South Africa. The colour pattern of the South African population is somewhat different from other regions, with more reddish areas and more yellow markings on mesosoma underside, including a longitudinal yellow line on femur I.

Nest. This species has a small nest and colony size; the largest observed nest had about 30 cells, with nine adults (Viljoen 2024). The nests initially have an apical stalk (Uys 2013), but at later colony stages the nest becomes less regular in shape. Most observed nests were located on leaves (Adam 2019, 2020, 2021; Viljoen 2024) or branches (Uys 2013; Adam 2015), and one nest was observed located on a horizontal barbed wire, with partial destruction of cells and six remaining males still present in the nest (Adam 2016). The cell wall is compact and brownish, and cocoon caps are brown, not substantially different from the cell wall colour.

***Ropalidia capensis* (de Saussure, 1862)**

Observations. Republic of South Africa • 5♀♀, nest; Garden Route Botanical Garden, Eden; 33.94541°S, 22.46388°E; 8 Mar 2018; (Ralston 2018) • 2♀♀, nest; Garden Route Botanical Garden, Eden, Western Cape; 33.94729°S, 22.46377°E; 18 Oct 2020 (Ralston 2020).

Several nests of this species were observed, exhibiting a unified nesting pattern. The nest has a droplet or slightly elongated form, and to a degree, it is moulded by the environment. The commonest observed nest formula was apically two cells that are progressively widening to a width of up to ten cells and lengths of up to 40 cells (Ralston 2018). The cell wall comprises various shades of grey colour, with brown cocoon caps; the cells are disproportionally deep, commonly 2.4–2.8 × as wide as long (Ralston 2020). All of the observed nests were located low in heavy bushes, sometimes in hardly accessible micro-locations.

***Ropalidia chromis* Polašek, 2024**

male Figs 1–4A; female Fig. 4B

Material examined. Democratic Republic of the Congo • 4♀♀, 1♂; Mbandaka; "MUSEE DU CONGO/ Eala, I 1936/ J. Ghesquiere/ 2041", ("R. DET. E 4938"); RMCA • 1♀, 1♂; Mbandaka; "MUSEE DU CONGO/ Eala, – 1936/ J. Ghesquiere/ 23781"; RMCA

Observation. Republic of the Congo • 2♀♀, nest; Mbandaka Odzala-Kokoua, Ouesso; 0.75775°N, 15.25975°E; 24 Nov 2023; obs Emily Rampling; (Rampling 2023)

New record for Republic of the Congo.

Description. Males. Wing length 8.7–9.1 mm.

***Head*.** Head frontally 1.35 × as wide as long (Fig. 1A), in dorsal view 2.6 × as wide as long, not narrowing behind eyes, barely emarginate posteriorly (Fig. 1C). Clypeus 1.4 × as wide as long (measured as transversal distance between oculo-clypeal angle against distance from the basal emargination to apex), with very elongated base with streamlined upes that continues directly into lateral

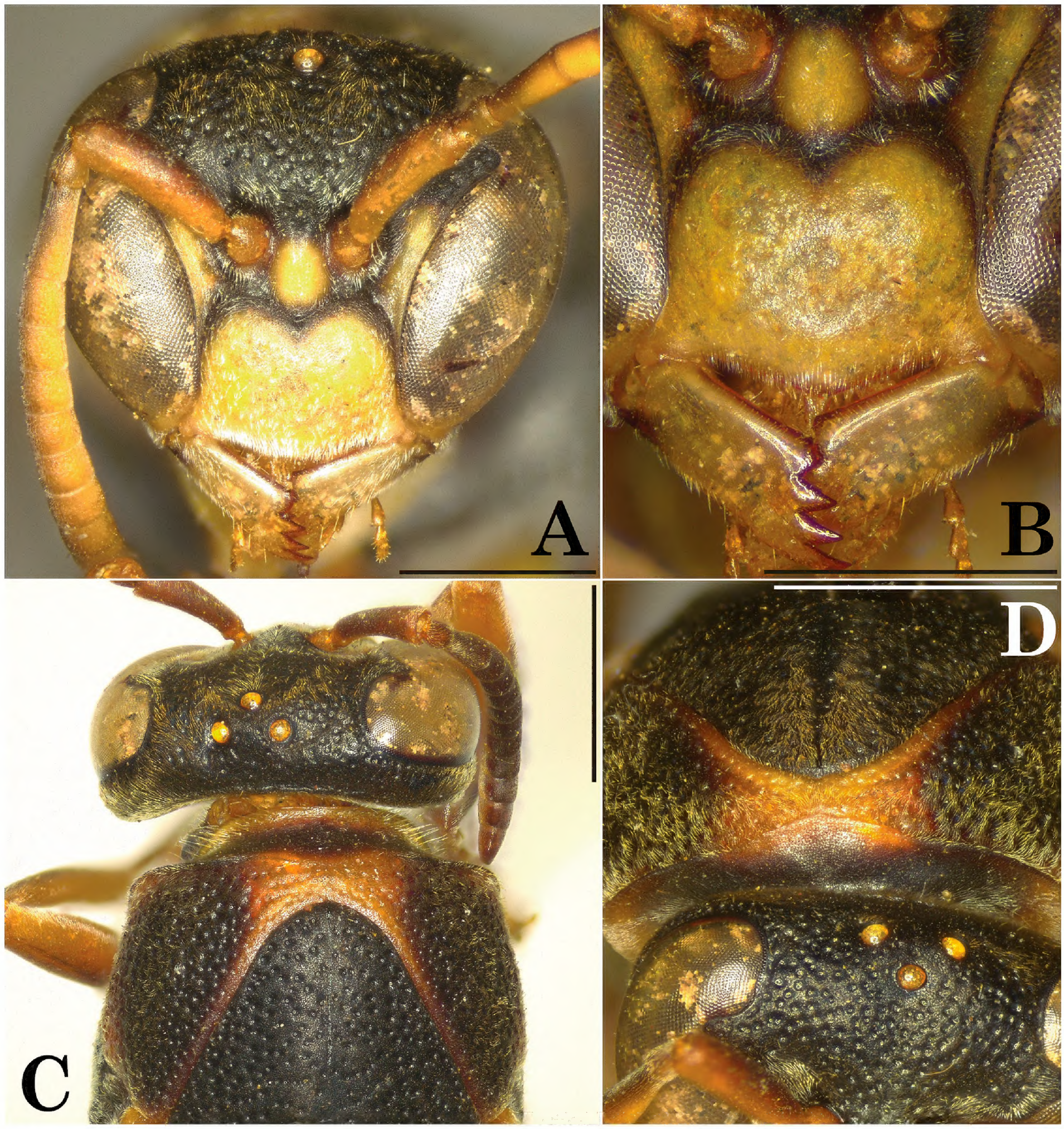

Figure 1. *Ropalidia chromis* Polašek, 2024, male. **A.** Head, frontal view; **B.** Clypeus, frontal view; **C.** Head and pronotum, dorsal view; **D.** Pronotal carina, dorsal view. Scale bars: 2 mm.

margin of clypeus and very elongated interantennal area that reaches apical half of clypeus; juxtamandibular excavation very shallow, apex barely pointy (Fig. 1B). Clypeus surface with cuticular texture, impunctate (Fig. 1B). Frons sparsely and coarsely punctate, punctures 2 × diameter apart, with matt interspaces; inner orbit and interantennal area impunctate, eye sinus similarly punctate to frons; area in front of forward ocellus more densely punctate (Fig. 1A). Distance between antennal sockets 1.2 × as long as socket-eye distance (Fig. 1A). Occiput anteriorly with similar punctures to those on frons, posteriorly impunctate and shiny (Fig. 1C). Gena with similarly sized and shallower punctures, more or less retained even close to occipital carina; occipital carina

complete, mostly streamlined or barely sinuate in lowest third (Fig. 2A). Mandible moderately tortuous, shiny, with only a few poorly-defined craters. Posterior ocelli 1.8 × diameter apart, 3.25 × diameters apart from eye and 2.2 × diameters apart from occipital carina (Fig. 1C). Scape barely widened, 3.4 × as wide as long, 1.8 × as long as AF1; AF2 1.1 × as long as wide (measured as mid-length over mid-width), remaining flagellomeres gradually wider (Fig. 1A), AF6–AF8 widest, with AF8 1.4 × as wide as long; AF11 1.7 × as long as wide (measured as linear distance from base to tip divided by base width), with curved shape and subacute tip (Fig. 2B). Tyloids originate as a small blackish spot on AF2, gradually increasing in size, initially visible as trichome clearing on AF5, more developed on distal flagellomeres (Fig. 2B); tyloids hardly discernible from flagellomere surface, with depressed area until AF10, where it is larger, dorsally elevated above flagellomere surface and shiny (Fig. 2C); AF11 tyloid shiny, linearly narrowing towards tip (Fig. 2B).

***Mesosoma*.** Mesosoma slender, dorsally 1.15 × as long as wide in dorsal view, 1.1 × as wide as widest part of head (Fig. 1C). Pronotum slender, with barely excavated area in dorsal view, lobes weakly developed, humeri rounded or just barely angled, pronotal carina laterally well developed, dorsally gradually lowering, medio-dorsally flattened into triangular evanescent area (Fig. 1C, D); pronotum punctures coarse and large, diameter apart, somewhat smaller dorsally and larger inferiorly, with swollen and matt interspaces that create network inferiorly; punctures near mesoscutal margin small, mediodorsally very shallow or just in traces (Fig. 3). Disc of mesoscutum 1.05 × as long as wide, linearly narrowing anteriorly; mesoscutum sparsely punctate, punctures 1.5–2 × diameter apart, with cuticular/matt interspaces; puncture density retained throughout entire mesoscutum (Fig. 1C). Mesepisternum with huge and confluent punctures creating network (Fig. 2D) and rendering strongly carinated margin from anterior impunctate surface (anterior mesepisternum surface can have a few isolated punctures); posterior part of mesepisternum with small and spaced punctures; mesepimeron without vertical carina towards mesepisternum (Fig. 2D). Metepimeron coarsely and horizontally striate, metepisternum with cuticular surface and some poorly-defined punctures anteriorly (Fig. 2D). Disc of scutellum quadrate, 2.1 × as wide as long, with sparse punctures and cuticular interspaces, discernible median depression and short median carina, that extends on anterior surface and reaches about one-quarter of scutellum width; disc of metanotum quadrate, 2.7 × as wide as long, with two paramedian sinuate arches (Fig. 2E). Propodeum linearly narrowing towards valvula, with shallow median depression, inferiorly striate, superiorly punctate, puncture size large but poorly defined (Fig. 2E); lateral face of propodeum coarsely punctate (Fig. 2D). Tarsal spur I developed, with broad base, about 2 × as long as wide, weakly tortuous.

***Metasoma*.** T1 wide and angular, dorsal and posterior face at right angle in lateral view (Fig. 3A); posterior face coarsely punctate, with punctures 1.0–1.5 × diameter apart and swollen cuticular interspaces; T2 with somewhat smaller and substantially shallower punctures, with caudally directed shallowing (Fig. 3A). T2 and S2 curvature similar, suture between them visible for over half of segment length; T2 lamella translucent and yellow; transition between T2 surface and lamella gradual, lamella very weakly punctate proximally, distal two thirds impunctate; remaining metasomal segments shallowly punctate.

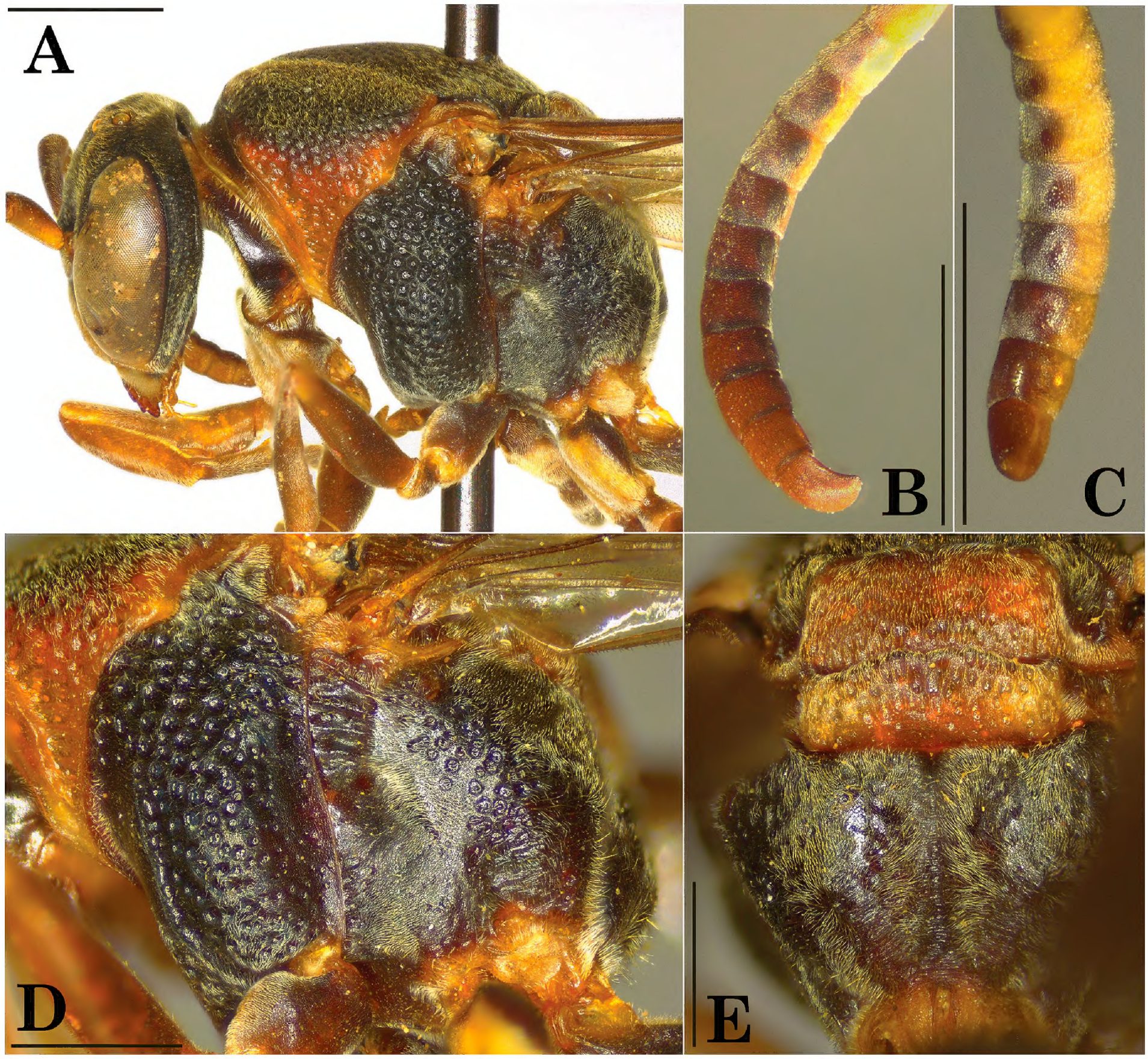

Figure 2. *Ropalidia chromis* Polašek, 2024, male. **A.** Head and mesosoma, lateral view; **B.** Antenna, dorsal view; **C.** Tyloids, median view; **D.** Mesosoma, lateral view; **E.** Posterior mesosoma, dorsal view. Scale bars: 2 mm.

***Pilosity*.** Body with short yellowish-silvery pubescence; clypeus (notably denser apically), interantennal area, inner orbit, low gena, mandible and lateral parts of mesosoma with silvery (Fig. 3A), frons, occiput, mesosoma dorsally and metasoma with yellowish. Clypeus without protruding setae, only with underlying silvery pubescence, frons setae 0.6–0.8 × as long as forward ocellus diameter; pubescence on pronotum shorter than that on frons, mesoscutum with microscopic pubescence and no protruding setae (Fig. 2A); remaining parts of metasoma with very short pubescence, expect lower half of propodeum with somewhat longer protruding setae (Fig. 2E). T1 and T2 with minute pubescence and no protruding setae (Fig. 3A), S3–S6 with gradually lengthening protruding setae, terga with shorter setae.

***Colour*.** Basally black, except yellow face, mandible (Fig. 4), coxa I–III and posterior band on T2; suffused brownish-reddish-yellow lower and medio-dorsal part of pronotum, scutellum and metanotum, posterior band on T1, femur and

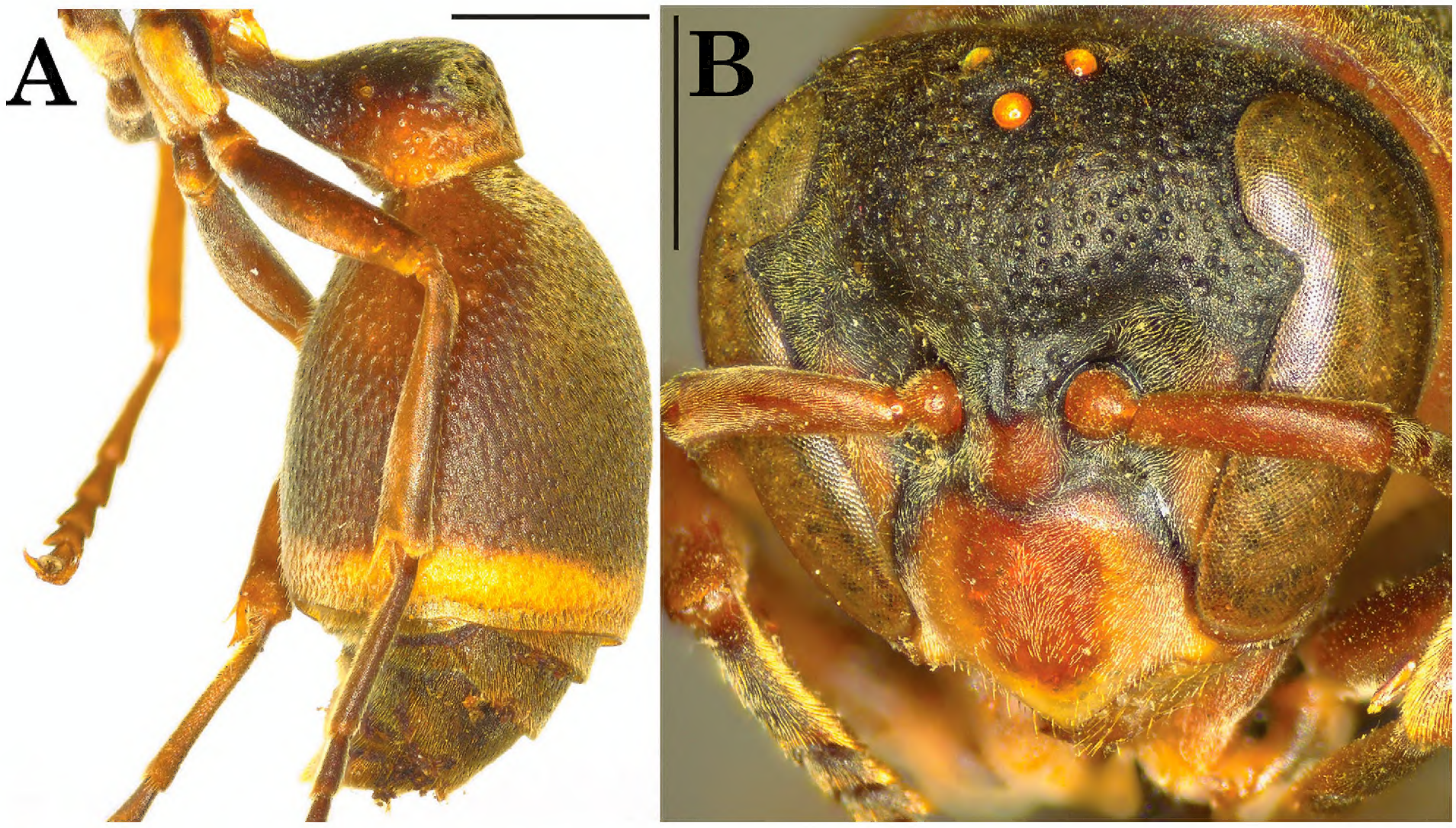

Figure 3. *Ropalidia chromis* Polašek, 2024. **A.** Male, metasoma, lateral view; **B.** Female, head, oblique view. Scale bars: 2 mm.

Figure 4. *Ropalidia chromis* Polašek, 2024, male, habitus, lateral view. Scale bar: 4 mm.

tibia, tarsi dark-brown (Fig. 4). Wings smoky transparent, venation brown, stigma brown and opaque, apical spot and anterior margin more infuscate (Fig. 4).

Nest. One nest was observed, from Odzala-Kokua region (Rampling 2023). The nest was in the early colony stage, with 13–18 cells (impossible to define due to the obscured side), with a compact cell wall, two elongated cells with dark-grey cocoon caps and additional pulp on them. The nest was located on a broad leaf, but the orientation is difficult to ascertain. Two adult females were observed on the nest, and there were no additional details available.

Comparative notes. The examination of concomitant males and females confirmed unique characteristics of this species within the entire genus, which include rounded humeri with medio-dorsally evanescing pronotal carina, huge punctures high on mesepimeron with strong horizontal striae on metepimeron, with angular and coarsely punctured T1. The male characteristics did not provide much support towards group membership, since males have tarsal spur I (characteristics of *capensis* group), but it has a broader base than in all examined species from that group. Next, males have low tyloids, which are even depressed in AF5–9, while most of *capensis* group species have elevated tyloids above flagellomere surface. The distance between antennal sockets was shown to be a higher-order feature that splits the *capensis* and non-*capensis* groups (Polasek et al. in press). The antennal socket distance is 1.2 × as long as their diameter in *R. chromis*, which is similar to average ("ancestral") of the non-*capensis* group, and contrasting with the average of the *capensis* groups with 1.0 × socket diameter. Lastly, the shape of frons in both males and females (Fig. 3B) is unique, with depressed peri-antennal and median area, contrasting with all other African *Ropalidia* that have flattened frons. All this contributes to the proposal that this is the third lineage in African *Ropalidia* (Polasek 2024), one that might be close to the ancestral form for these two groups, as it exhibits characteristics of both of them.

Ropalidia crassipunctata Giordani Soika, 1981

Material examined. Democratic Republic of the Congo • 2♀♀; Shabunda, "B. CONGO/ 46 mi NE of/ Kamitunga, 930 m/ VIII-18-1957", "E. S. Ross &/ R. E. Leech/ collectors"; 18 Aug 1957 (CAS).

Observation. Cameroon • 1♀, nest; Shabunda Dja Faunal Reserve, Somalomo, De l'Est; 3.19073°N, 12.81214°E; obs Stefan Eakame; (Eakame 2025)

Nest. The observed nest of this species was black, with heavily masticated blended and scattered green and reddish-brown chips (without horizontal colour streaks). The nest had up to ten cells, with vertical cell direction and downward cell openings. The cell colours seemed to mimic the adult wasp colour, with black, reddish and yellow markings (Eakame 2025).

Ropalidia excavata Giordani Soika, 1977

Material examined. Democratic Republic of the Congo • 1♀; Lulua, "MUSEE DU CONGO/ Eala: 19-x-1931/ H.J. Bredo"; RMCA.

Observation. Republic of the Congo • 1♀, nest; Ouesso; 0.76259°N, 15.26128°E; obs Gwili Gibbon; (Gibbon 2023).

Notes. One of the examined specimens has a very convex clypeus, with specific yellow markings on clypeus and head, all three coxae with yellow markings and all three femora with distal yellow spot. Despite obvious difference in colouration, there were no additional morphological differences between this specimen and two examined paratypes of *R. excavata* Giordani Soika.

Nest. This is the only African mainland species that builds larger nest aggregations (Gibbon 2023). Interestingly, the nests in the observed aggregations exhibited several shapes, from discoid to elongated, or even slightly irregular. The cell wall of the observed nests was compact and brownish, with some lightly brown horizontal streaks, with whitish cocoon caps.

Ropalidia fita Polašek, 2025

Observations. **Mozambique** • 3♀♀, nest; Muanza, Sofala; 19.01092°S, 34.67708°E; 1 Oct 2024; obs Ismenia Sitoe; (Sitoe 2024)

Zambia • 4♀♀, 2 nests; J. Lazy J. Sanctuary, Lusaka Central, Lusaka; 15.49645°S, 28.45342°E; 22 Nov 2020 and 31 Oct 2021; obs Nico Vromant; (Vromant 2020, 2021).

Nest. This species builds elongated nests, with a 2*n formula (Sitoe 2024). The cell wall is ferruginous, with lightly greenish horizontal streaks, and whitish cocoon caps with cell wall pulp on their surface (Vromant 2020).

Ropalidia flavoscutellata Polašek, 2025

Taxonomy. *Ropalidia flavoscutellata* Polašek, 2025 is a name that was assigned to a newly described taxon, but it is a junior primary homonym of *Ropalidia jacobsoni flavoscutellata* Das & Gupta, 1989. Due to this, in line with the (International Code of Zoological Nomenclature 1999), articles 53.3, 60.3 and 72.7, a new replacement name is proposed for this taxon, *Ropalidia mutuntula* Polašek, nom. nov. The etymology of the name stems from Bemba, a major language spoken in the region of the holotype collection, translated as “yellow”, referring to large yellow areas on the body, noun in apposition.

Ropalidia haladaorum Polašek, 2025

Observation. **Republic of the Congo** • 2♀♀, nest; Parc national d’Odzala-Kokoua, Cuvette-Ouest; 0.53038°N, 14.86947°E; 2 Nov 2021; obs Pedro Lopes; (Lopes 2023).

Nest. This is a central African species, characterized by mainly brown body colour and developed inferior pronotal carinae. One nest of this species was observed in Odzala-Kokoua region (Lopes 2023). The nest has 11 cells (from what can be inferred from two angles of the nest that are provided in the photos), hanging with an apical stalk from a leaf base. The cell wall is grey-greenish, compact and apparently, rather thick, with somewhat whitish cocoon caps and plenty of pulp attached to them. All three enclosed caps have a small central hole, suggesting a possible parasitization by Braconidae or another similar

family of small parasitoid wasps. The stalk does not seem to be layered with an ant-repelling substance, since it does not show any shining. Two adult females were observed on the nest.

Ropalidia macloutsie Polašek, 2025

Observations. Republic of South Africa • 1♀; Indlovu; 29.50878°S, 30.51871°E; 4 Aug 2019; obs Alan Manson; (Manson 2019); • 5♀♀, 1♂, nest/1♀, nest; Nature's Valley, Western Cape; 33.98069°S, 23.55648°E/33.97678°S, 23.56154°E; 7 Feb 2019/9 Dec 2019; obs Karen Pagel/obs Paul Venter (Pagel 2019; Venter 2019); • 4♀♀, 1♂, nest Weenen, KwaZulu-Natal; 28.71684°S, 30.06266°E; 18 Mar 2019; obs Andrew Anderson; (Anderson 2019).

Nest. This is the only African mainland species that builds type I nest, with a single string of cells suspended from the surface; the cells share only one wall, but in the early stages of each cell development not even that, but a single strand of paper (Venter 2019). The nests can have up to 20 cells (Pagel 2019), with cell bottom openings (Anderson 2019).

Ropalidia mosichi Polašek, 2025

Observation. Namibia • 4♀♀, 2♂♂, nest; Windhoek; 22.57400°S, 17.12432°E; 21 Dec 2023; obs Christian Langner; (Langner 2024).

Nest. One nest of this species was observed in Namibia. The nest is elongated, one or two cells wide and about 50 cells long; the cell wall is greyish with numerous thin streaks of darker or lighter colour; the cell wall appears compact. Cocoon caps are scattered in the upper and mid part, projecting above the cell margin, with apparently very diverse colour pattern, including white, yellowish, lightly brown and dark-grey colour. Some larvae are visible in the lower part of the nest, growing in the incomplete cells and suggesting a quick colony turnover; several upper cells appear shorter, but it is unclear if these first few cells are built shorter or if the wasps are reusing the cell wall material.

Ropalidia novissima Giordani Soika, 1944

Observation. Tanzania • 1♀, nest; Longuo Street, Moshi; 3.32630°S, 37.31625°E; 13 Nov 2024; obs Paul Geisendörfer; (Geisendörfer 2024).

New record for Tanzania.

Nest. One nest of this species was observed, suggesting a unique nesting architecture in mainland African species. Firstly, it seems to have an inverted orientation, which is a feature that was only reported for *R. jemmae* Polašek & de Beer, 2023 from Madagascar (Polasek and de Beer 2023). Next, it appears to have a greenish tint of the cell wall, with brownish areas in some of the cells. The stalk of the nest is disproportionately long for such nest size, when compared to other mainland *Ropalidia*. The cell wall appears to be made from numerous long fibres, with porous cell wall; cocoon caps are silvery and shiny. First record of this species for Tanzania.

***Ropalidia nigrocerasina* Polašek, 2025**

Observation. Malawi • 6♀♀, 3♂♂, nest; Nkhotakota Wildlife Reserve; 12.85013°S, 34.17112°E; 27 Nov 2020; obs Markus Meiner; (Meiner 2020).

Nest. One nest of this species was observed in Malawi. In contrast to a very similar species *R. valentula* Polašek, 2025 that builds regular discoid nests, this species seems to be building nests that are more irregular. The observed nest consisted of two nearly equally-sized lobes, with cocoon caps evenly distributed in both lobes. This might be a similar nesting pattern previously reported in *R. ignobilis* (Wenzel, 1992), where an accessory lobe is built to accommodate the production of males and queens, as opposed to the initial lobe that is used to rear workers. The nest was suspended from a roughly cut wooden plank.

***Ropalidia nigrofemorata* (Cameron, 1910)**

Observation. Kenya • multiple ♀♀, nest; Watamu; 3.33706°S, 40.03977°E; 23 Jan 2024; obs Titi-uu; (Titi-uu 2024).

Nest. One nest was observed in Kenya. The nest was located in a canopy, with an elongated shape and an apparent 5*35 nest formula with an apical stalk; the cell wall was light grey with frequent darker grey streaks, and cocoon caps were white (Titi-uu 2024).

***Ropalidia perovici* Polašek, 2025**

Observation. Republic of South Africa • 1♀, nest; Jordaanpark, Heidelberg; 26.49925°S, 28.33956°E; 16 Mar 2023; obs Johan Heyns; (Heyns 2023).

Nest. This species builds a simple discoid nest, with very porous cell wall and irregular cell openings (Heyns 2023); notably, the observed nest was at a very early cycle stage, so maybe cell openings become more regular later in the colony cycle. The cell wall is brown-reddish, with heavily masticated material used in the construction.

***Ropalidia soikae* Polašek, 2025**

Observations. Bénin • multiple ♀♀, nest; Natitingou; 10.25237°N, 1.37562°W; 19 Aug 2022; obs Florentin N'dah; (N'dah 2022).

Ghana • 7♀♀, nest; Wechiau Community Hippo Sanctuary, Talawona Lodge; 9.73986°N, 2.78296°E; 25 Mar 2005; obs Robert Longair; (Longair 2020).

Nest. This is a canopy-nesting species, which builds initially elongated nests with apical stalk. At later colony cycle stages, the nests are expanded by an accessory lobe(s), which lead to a branched or a triangular nest form (Longair 2020; N'dah 2022). The cell wall is grey with some brownish streaks, with whitish-grey cocoon caps that are elevated above the cell margin.

***Ropalidia tenuipilosa* Polašek, 2025**

Observations. Republic of South Africa • multiple ♀♀, nest; Marloth park; 25.37191°S, 31.76449°E; 22 Feb 2019/27 Jan 2024; obs Copper/obs Ilya Gomyranov (Copper 2019a; Gomyranov 2024) • multiple ♀♀, nest; Richards bay; 28.68924°S, 31.99837°E; 16 Apr 2023; obs Richard Johnstone; (Johnstone 2023)

Mozambique • multiple ♀♀; Musseia camp; 16.70212°S, 38.79809°E; 12 Mar 2023; obs Martin Mandak; (Mandák 2023).

Nest. This is one of the species from the *nigrofemorata* group, which build large and elongated canopy nests (Mandák 2023), commonly in thorny plants like *Acacia*, or in man-made objects that resemble thorny environments, like barb-wired fence (Gomyranov 2024). In contrast to *R. nigrofemorata* (Cameron), this species seems to frequently include greenish horizontal streak in the cell wall (Johnstone 2023), suggesting a more visually concealed nesting architecture. The initial shape of the nest is elongated, with accessory lobes that are sometimes characterized by completely closed cocoon caps, suggesting a pattern similar to *R. ignobilis* (Wenzel, 1992), of mass production of males and queen in the accessory lobes (Copper 2019a, b). Towards a more developed colony stage, nectar drops can be observed in the apical cells (Copper 2019a). The nests are sometimes raided by chafers, with no indication of the wasps raising alarm or exhibiting deferring or attacking tactics towards the chafer (Copper 2019b; Villet and Brassine 2025). One observed female was stylopized.

***Ropalidia unidentata* Giordani Soika, 1991**

Observation. Malawi • multiple ♀♀ and multiple nests; Kasungu National Park; 13.05012°S, 33.14911°E; 27 Jan 2025; obs Aubrey (Nkhata 2025).

Nest. One nest of this species was reported before, placed on a wooden plank (Polasek et al. 2025). Several more nests were observed after that report, suggesting an interesting pattern across the continent. The observed nests in Tanzania were placed on leaves and usually had up to 15 adults (Gabriel 2023), while the nests in South Africa were commonly placed on wooden and other man-made objects and the colony sizes were larger; a smaller nest colony was observed in one of the observations (Nkhata 2025).

***Ropalidia* sp.**

Observations. Republic of South Africa • 5♀♀, nest; Pretoria; 25.75657°S, 28.19138°E; 28 Mar 2025; obs Fanie Vermaak; (Fanievermaak 2025) • 1♀, nest; Tshwane, Gauteng; 25.79744°S, 28.29832°E; 21 Feb 2024; obs Lezanne Rossouw; (Rossouw 2024).

Nest. Two very interesting nests were observed, belonging to an unknown species from the *capensis* group. Both nests were built in an enclosed space, one in the green shiny crevice of the man-made object, resembling an en-

closed space of a leafy plant (Rossouw 2024), and the other on the spiny trunk of a thorny plant (Fanievermaak 2025). In both cases, the nest wall was black and dark grey (one of these has horizontal streaks of brownish colour). In both nests, the cell openings were directed downwards, and the stalk was impregnated by an ant-repellent excretion since both stalks were shiny. The most likely candidate for the nest is a dark cluster of what was previously considered as *Ropalidia antennata* (de Saussure), which has several genetic clusters, and some of these are very dark in body colour (Polasek et al. 2025), like the adult wasps in both photos. The nesting habits suggest a separate taxon, but without confirmation, these two nests are currently treated as *Ropalidia* sp.

***Ropalidia* sp.**

Observations. Cape Verde • 1♀; Santo Antão; 17.15517°N, 25.11609°E; 18 Feb 2023; obs Jean-Paul Boerekamps; (Boerekamps 2023) • 1♀; Boca de Curral; 17.16267°N, 25.10343°E; 5 Oct 2023; obs Tsveta Davidkova; (Davidkova 2023) • 1♀; Ribeira Grande; 17.16496°N, 25.08789°E; 26 May 2023; obs Bret van Putten; (van Putten 2023).

Three observations of this genus were made in Cape Verde, suggesting that this may be a more stable population and not an isolated invasion event. The most likely candidate species is *R. aethiopica* (du Buysson), although the photographs do not exclude a dark form of *R. guttatipennis* (de Saussure), an undescribed species or even multiple species, since one of the observations suggests a darker body colour and originates from the northern islands of the archipelago (van Putten 2023).

Discussion

The most notable contribution of this study concerns the nesting architecture of African mainland *Ropalidia* species. A previous study suggested that most species share a simple discoid nest form (Polasek et al. 2025), but the observations reported here challenge that view. Several potentially diagnostic construction features are apparent among mainland nests; however, the available information remains limited. For most species, only a single nest was documented in this study (*R. haladaorum*, *R. novissima*, *R. mosichi*, *R. chromis*), therefore preventing more generalized conclusions.

The newly discovered male of *R. chromis* confirmed a distinct position of this species in the genus that does not fit neatly into either the *capensis* or the non-*capensis* group. Further clarification might be available through genetic analysis, requiring fresh specimens to be analysed. This confirms Western Africa as a very interesting and substantially underexplored area of Africa in terms of Vespidae.

Three observations of *Ropalidia* from Cape Verde are intriguing and may indicate long-distance dispersal. The colonization of the archipelago is likely recent; however, further interpretation is premature without examination of the specimens to confirm species identity.

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The authors have declared that no competing interests exist.

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Data availability

All of the data that support the findings of this study are available in the main text.

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